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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,881	06/24/2003	Jeffrey W. Long	NC 84,353	8219

26384 7590 05/31/2006

NAVAL RESEARCH LABORATORY
ASSOCIATE COUNSEL (PATENTS)
CODE 1008.2
4555 OVERLOOK AVENUE, S.W.
WASHINGTON, DC 20375-5320

EXAMINER	
ONEILL, KARIE AMBER	
ART UNIT	**PAPER NUMBER**
1745	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/601,881	LONG ET AL.	
	Examiner	Art Unit	
	Karie O'Neill	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Remarks

Claims 1-12 are pending this Office Action.

Response to Arguments

Applicant's arguments filed March 27, 2006, have been fully considered but they are not persuasive. Applicant asserts that the present application concerns a nanostructured electrically conductive metal oxide interpenetrated by a continuous mesoporous network wherein there exists connectivity of the pore network even upon deposition of an ultrathin, conformal polymer coating on the metal oxide network. Examiner asserts that the Leventis reference meets these requirements because the claimed invention does not seem to require a continuous porous network once the polymer is coated on the metal oxide. It is suggested that Applicant amend the claims to incorporate aerogels, ambigels, xerogels [specification page 5, paragraph 0012]. However, Applicant is advised that entry of such amendment after final rejection is not a matter of right.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leventis et al. (US 5282955) in view of Sugnaux et al. (US 2004/0131934 A1).

Leventis et al. discloses in column 4 lines 10-22, an electrode made of an electrically conductive metal oxide and being coated with an electrically conductive polymer, wherein the polymer coating is conformal and based on an arylamine polymer, specifically being aniline and polyaniline, and being electrodeposited on to the electrode.

Leventis et al. does not disclose expressly the electrode being a nanostructured, mesoporous metal oxide, wherein said metal oxide is selected from the group consisting of manganese oxides, vanadium oxides, nickel oxides, iron oxides, and physical or compositional mixtures thereof.

Suganaux et al. discloses in paragraph 0019, an electrode active material the exhibits mesoporous porosity, wherein the electrode active material comprises discrete solid connecting particles comprising nanoparticles and the electrode active material is

selected from an oxide of non-transition or transition metals selected from the group consisting of Group VB, VIIB and VIII elements (paragraph 0049) more specifically manganese oxide (paragraph 0087).

Leventis et al. and Suganaux et al. are analogous art because they are both from the same field of endeavor electrodes. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the nanostructured, mesoporous metal oxide electrodes of Suganaux et al. in conjunction with the polymer coating of Leventis et al. for the purpose of forming electrodes with a large specific surface area for use in batteries, photovoltaic cells, supercapacitors and fast electrochromic devices.

With respect to Claims 6 and 11, Leventis et al. discloses the electrode of the Claims 1 and 7 above, but does not disclose expressly the polymer coating of the electrode wherein said polymer coating is less than 10-nm thick. It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the electrode with a polymer layer of less than 10-nm, because the thinner the polymer layer the smaller and more desirable the device is and since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch,* 617 F.2d 272, 205 USPQ 215 (CCPA 1980). If applicant can provide evidence that is commensurate in scope of the claims that unexpected results can be reached by using a polymer layer of less than 10-nm, the rejection will be withdrawn.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karie O'Neill whose telephone number is (571) 272-8614. The examiner can normally be reached on Monday through Friday from 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAO

MICHAEL BARR
SUPERVISORY PATENT EXAMINER